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DR 1088  
NOVEMBER 1979  
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METEOROLOGICAL DATA REPORT

19307B GSRS  
Missile Nos. 1059 and 1093  
Round Nos. V-79 and V-80  
02 November 1979

by

White Sands Meteorological Team

DTIC  
SELECTED  
APR 3 1980  
S C D

ATMOSPHERIC SCIENCES LABORATORY  
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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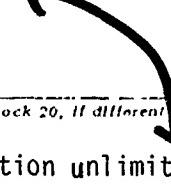
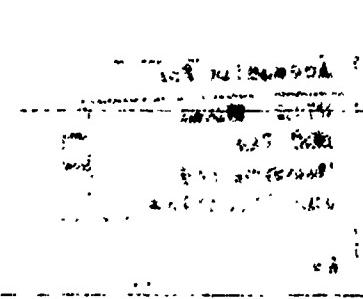
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1. REPORT NUMBER <b>DR 1088</b>	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) <b>19307B GSRS, Missile Numbers 1059 and 1093, Round Numbers V-79 and V-80, 2 November 1979.</b>	5. TYPE OF REPORT & PERIOD COVERED <b>14 ERAADCOM/ASL DR-1088</b>	6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) <b>White Sands Meteorological Team</b>	8. CONTRACT OR GRANT NUMBER <b>16</b>	9. PERFORMING ORGANIZATION NAME AND ADDRESS <b>US Army Electronics Research &amp; Development Cmd Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico 88002</b>
10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS <b>DA Task 1F665702D127/02</b>	11. DEPORT DATE <b>11 November 1979</b>	12. NUMBER OF PAGES <b>14</b>
13. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) <b>US Army Electronics Research &amp; Development Cmd Adelphi, MD 20783</b>	14. SECURITY CLASS. (of this report) <b>UNCLASSIFIED</b>	15. DECLASSIFICATION/DOWNGRADING SCHEDULE <b>12/15</b>
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)  <b>Meteorological data gathered for the launching of the 19307B GSRS, Missile Numbers 1059 and 1093, Round Numbers V-79 and V-80 are presented in tabular form.</b>		

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By _____	
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Availability _____	
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## INTRODUCTION

19307B GSRS, Missile Numbers 1059 and 1093, Round Numbers V-79 and V-80, were launched from SPEC, White Sands Missile Range (WSMR), New Mexico, at 0903 and 0903:04 MST, 02 Nov 79. The scheduled launch times were 0900 and 0900:02 MST.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

### 1. Observations

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( $^{\circ}\text{C}$ ), relative humidity, dew point ( $^{\circ}\text{C}$ ), density ( $\text{gm}/\text{m}^3$ ), wind direction and speed, and cloud cover were made at the SPEC Met Site at T-0 minutes.

(2) Monitor of wind speed and direction from one anemometer was provided in the launch control room.

#### b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

#### SITE AND ALTITUDE

SPEC	2 km
WCI	2 km

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 78,500 feet in 500-feet increments.

#### SITE AND TIME

AFSWC 0930 MST

TABLE 1. Surface Observations taken at 0900 MST,  
02 November 1979, at SPEC Site, 19307B  
GSRS, Missile Numbers 1059 and 1093,  
Round Numbers V-79 and V-80.

ELEVATION	N/A	FT/MSL
PRESSURE	862.0	MBS
TEMPERATURE	10.0	°C
RELATIVE HUMIDITY	41	%
DEW POINT	-2.6	°C
DENSITY	1056	GM/M <sup>3</sup>
WIND SPEED	12	KTS
WIND DIRECTION	030	DEGREES
CLOUD COVER	4	Ci

PILOT BALLOON MEASURED WIND DATA

TABLE 2

RELEASED FROM SPEC

DATE 02 November 1979

TIME 0900 MST

TRACKER

### COORDINATES (WSTM)

1

02 November 1979

Y= N/A

II= N/A

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH

HEIGHTS ARE METERS AGL XX OR FEET AGL .

PILOT BALLOON MEASURED WIND DATA

TABLE 3

RELEASED FROM WCI

DATE 02 November 1979

TIME 0900 MST

## Tracke

### COORDINATES (WSTM)

**X=**    **S=**    **N/A**

02 November 1979

NZA

11 - 31/0

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH

HEIGHTS ARE METERS AGL XX OR FEET AGL

STATION ALTITUDE 4700.63 FEET MSL  
2 UV. 79 0930 HRS 15<sup>th</sup>  
RECEIVED NO. 110

SIGNIFICANT LEVEL DATA  
AT 2000 FT MSL

TABLE 4

EQUATORIAL COORDINATES  
53.0468 LAT DEG  
106.56531 LON DEG

PRESSURE (TO INCHES MILLIBARS)	ALTIMETER INCHES MM	TEMPERATURE AIR DEGREES C	TEMPERATURE WATER DEGREES C	REL. HUM. PERCENT
1002.0	4700.6	10.0	-2.0	41.0
1050.0	5051.7	7.8	-1.0	43.0
781.0	7319.5	1.2	-6.6	48.0
751.4	3617.1	-1	-9.3	49.0
721.6	9427.0	-1.2	-14.7	35.0
701.0	10225.1	-1.2	-15.4	33.0
663.0	19669.4	.7	-14.1	32.0
654.8	11973.5	-1.3	-15.0	32.0
617.0	15591.3	-1.7	-19.2	32.0
573.2	15644.1	-5.2	-19.2	32.0
509.0	16221.2	-13.2	-26.0	33.0
448.6	21753.9	-20.9	-35.4	32.0
432.0	22471.3	-21.4	-24.4	78.0
417.0	23323.6	-24.0	-25.4	90.0
409.0	24259.9	-76.1	-78.0	93.0
360.2	26767.5	-29.2	-32.4	75.0
325.6	23785.0	-34.7	-39.4	63.0
306.9	30595.3	-40.2	-44.4	65.0
264.4	53392.4	-47.9	-50.2	69.0
250.0	34700.1	-49.9		
226.6	37372.2	-54.6		
215.0	37942.6	-56.1		
206.0	39423.0	-55.9		
196.6	40434.9	-56.9		
181.2	41499.1	-54.6		
167.6	43141.3	-54.8		
150.0	45163.5	-57.9		
127.2	44363.3	-51.1		
120.0	50052.1	-63.5		
116.6	50657.4	-61.2		
113.0	53755.7	-64.8		
89.2	55953.3	-65.4		
77.9	56760.0	-62.7		
70.0	60249.1	-64.0		
57.8	64247.1	-61.4		
50.0	67305.5	-55.2		
36.0	73190.6	-56.6		
30.0	76597.1	-55.4		

STATION LATITUDE 47°00.0' FEET MSL  
2 NOV. 73 0930 hrs MST  
ASU S10, 100. 149

UPPER AIR DATA  
3000-170140  
NFS/C

TABLE 5

GEOMETRIC ALI. IN FEET	PRESSURE MILLIBARS	TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY gm/CUBIC INCHES	SPEED OF WIND KNOTS	DIRECTION OF WIND DEGREES TIN	INDEX OF REFRACTION
4700.0	802.0	10.0	-2.0	41.0	105.0	056.0	1.000260
5000.0	652.6	8.3	-3.7	42.6	105.3	054.2	1.000257
5300.0	582.8	6.9	-4.6	43.9	104.0	052.2	1.000252
5600.0	512.1	5.1	-5.6	45.1	102.6	050.4	1.000248
5900.0	442.1	3.9	-6.9	46.2	101.2	048.7	1.000244
6200.0	391.2	2.1	-7.9	47.3	99.6	046.9	1.000240
6500.0	371.9	.9	-8.3	48.3	98.5	045.4	1.000235
6800.0	351.9	.1	-8.5	49.0	96.9	044.2	1.000231
7100.0	347.3	-0.3	-11.0	44.2	95.2	043.9	1.000226
7300.4	342.9	-1.3	-12.9	39.2	93.7	043.3	1.000220
7100.6	791.2	-1.2	-16.7	34.8	92.0	042.6	1.000215
7500.0	776.5	.9	-1.2	15.2	90.9	041.9	1.000211
7800.0	751.9	-1.4	-14.8	32.6	88.2	040.7	1.000207
8100.0	642.7	-1.5	-14.0	32.0	85.4	044.4	1.000203
8400.0	612.0	-0.5	-14.2	32.0	85.0	043.9	1.000199
8700.0	586.8	-0.3	-14.9	32.0	85.0	043.9	1.000196
9000.0	656.5	-1.0	-15.6	32.0	83.0	042.0	1.000192
9300.0	641.9	-1.2	-15.8	32.0	82.0	042.7	1.000188
9600.0	629.8	-1.5	-15.0	32.0	80.6	042.5	1.000184
9900.0	617.8	-1.7	-16.2	32.0	79.1	042.2	1.000180
10200.0	605.0	-2.7	-17.0	32.0	77.5	041.0	1.000176
10500.0	594.2	-3.6	-17.9	32.0	76.7	039.9	1.000172
10800.0	582.2	-4.6	-18.4	32.0	75.5	039.7	1.000168
11100.0	572.0	-5.3	-16.9	32.0	74.4	037.5	1.000173
11400.0	560.9	-6.7	-20.6	32.0	73.2	035.4	1.000170
11700.0	550.0	-7.3	-21.5	32.5	72.1	034.8	1.000167
12000.0	539.3	-6.9	-21.4	32.4	71.0	033.5	1.000164
12300.0	525.7	-10.8	-23.4	32.6	69.9	032.1	1.000161
12600.0	514.0	-11.2	-25.3	32.7	68.8	030.8	1.000158
12900.0	505.4	-12.3	-25.2	32.9	67.9	029.4	1.000155
13200.0	495.4	-13.4	-26.2	33.0	66.6	028.0	1.000153
13500.0	485.4	-14.3	-27.5	32.8	65.3	026.7	1.000150
13800.0	475.6	-16.1	-28.7	32.6	64.4	024.7	1.000148
14100.0	459.0	-17.5	-31.0	32.4	63.5	023.1	1.000145
14500.0	450.4	-18.8	-31.3	32.3	62.9	021.4	1.000143
14900.0	441.3	-20.2	-32.5	32.1	62.0	019.7	1.000140
15200.0	432.1	-21.1	-32.3	47.3	60.9	018.7	1.000139
15500.0	423.5	-21.5	-28.2	78.4	59.5	018.3	1.000138
15800.0	423.0	-23.0	-24.8	85.4	58.9	016.4	1.000136
16100.0	414.4	-33.8	-35.5	85.9	60.3	012.8	1.000136
16400.0	404.9	-61.6	-63.9	74.1	66.6	056.0	1.000149

DATA LAYER 1000 FT. MISSING RAW AND ABSOLUTE ELEVATION.

STATION LATITUDE 4700.65 FEET mSL  
2 SEC. 74 0930 1155 MST  
ASCI. 510.0. 140

UPPER AIR DATA  
AFSC  
mSL

TABLE 5 (CONT)

GEOMETRIC ALTITUDE mSL	PROJECTED MILLIBARS	TEMPERATURE AT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY 63/CUBIC METER	WIND DATA DIRECTION DEGREES (T), KNOTS	INDEX OF REFRACTION
24500.0	595.0	-71.0	73.5	601.7	593.8	275.8
25000.0	550.5	-60.5	63.2	632.9	500.1	275.2
25500.0	577.5	-50.0	52.3	589.0	502.0	275.6
26000.0	526.5	-39.5	42.4	549.3	595.0	273.5
26500.0	505.0	-29.0	32.2	513.9	606.9	274.1
27000.0	552.0	-39.4	33.8	595.5	607.0	274.9
27500.0	547.9	-31.2	25.5	497.3	605.5	275.2
28000.0	537.5	-32.2	26.9	487.2	604.0	274.5
28500.0	530.5	-34.1	30.4	481.2	602.5	275.0
29000.0	522.0	-35.4	32.3	473.5	601.3	273.4
29500.0	510.2	-39.0	41.1	460.0	599.0	273.2
30000.0	509.0	-38.2	42.4	456.0	597.2	272.4
30500.0	502.0	-39.6	43.7	451.4	595.4	271.7
31000.0	2450.0	-41.9	44.9	443.9	593.7	270.5
31500.0	269.0	-42.2	45.2	452.1	592.1	269.2
32000.0	260.8	-43.4	47.0	460.9	590.6	269.9
32500.0	270.5	-44.6	46.1	421.4	590.0	269.4
33000.0	270.5	-45.5	47.2	414.2	587.4	269.8
33500.0	269.3	-47.3	50.3	467.1	585.9	270.7
34000.0	256.5	-49.2	55.9	400.1**	584.2	271.5
34500.0	252.4	-49.4	56.0	395.0	584.7	271.5
35000.0	249.6	-50.4	51.3	389.7	581.4	271.5
35500.0	249.9	-51.5	51.5	378.2	580.3	270.7
36000.0	235.5	-52.2	51.5	379.1	579.1	269.9
36500.0	229.8	-53.1	51.1	363.0	578.0	269.1
37000.0	224.0	-53.9	50.6	355.0	576.6	269.4
37500.0	219.9	-55.0	50.9	350.1	575.5	269.0
38000.0	214.1	-56.1	50.5	345.6	574.0	269.4
38500.0	209.1	-56.0	50.5	339.4	574.1	270.7
39000.0	204.1	-56.0	50.5	327.4	574.1	272.5
39500.0	199.0	-55.0	50.5	319.7	574.1	274.0
40000.0	194.0	-56.5	50.5	312.9	572.5	274.4
40500.0	190.0	-56.8	50.8	305.9	573.1	274.6
41000.0	185.9	-56.7	50.6	297.2	574.5	275.0
41500.0	181.2	-54.6	50.6	266.9	575.9	275.2
42000.0	176.9	-54.7	50.7	262.1	575.8	275.7
42500.0	172.6	-54.7	50.6	269.6	573.7	277.0
43000.0	168.7	-54.8	50.5	269.2	573.7	277.0
43500.0	164.5	-55.3	50.5	263.4	575.0	277.5
44000.0	160.9	-55.9	50.5	256.0	574.2	277.9

AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE - 4700.63 FEET a.s.l.  
2 NOV. 73  
ASU STATION NO. 140

TABLE 5 (CONT.)  
AEROMETRIC  
ALTITUDE  
a.s.l. (feet)

GEOPOTENTIAL ALTITUDE a.s.l. (feet)	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	RELATIVE HUMIDITY PERCENT	DENSITY CUBIC FOOT	SPECIFIC HEAT KELVIN	MIND DATA WIND DIRECTION DEGREES (IN KNOTS)	INDEX OF REFRACTION:
44500.0	157.2	-56.5	252.7	572.4	273.4	90.4	1.000056
45000.0	155.5	-57.5	247.5	572.4	272.0	89.0	1.000055
45500.0	142.7	-57.9	242.4	571.5	279.0	87.8	1.000054
46000.0	149.2	-58.4	237.1	570.9	278.7	86.0	1.000053
46500.0	142.7	-58.3	231.9	570.3	279.5	85.8	1.000052
47000.0	152.0	-54.5	225.9	569.6	277.5	86.4	1.000051
47500.0	135.9	-59.8	221.9	569.0	278.4	87.3	1.000049
48000.0	132.0	-60.3	217.1	569.4	273.5	87.6	1.000048
48500.0	127.5	-60.3	212.4	567.9	275.0	86.2	1.000047
49000.0	125.4	-61.4	207.9	569.9	274.4	84.8	1.000046
49500.0	120.5	-62.4	203.6	569.0	274.3	80.5	1.000045
50000.0	120.5	-62.4	197.9	564.2	274.5	80.5	1.000044
50500.0	117.4	-61.7	192.4	566.4	274.5	71.3	1.000043
51000.0	114.5	-61.6	185.6	566.6	275.4	69.3	1.000042
51500.0	111.8	-62.2	181.9	565.8	275.1	67.3	1.000041
52000.0	109.7	-62.3	180.5	565.1	276.5	67.6	1.000040
52500.0	109.4	-63.1	176.0	564.5	276.9	68.9	1.000039
53000.0	105.8	-61.4	172.3	563.2	277.4	66.3	1.000038
53500.0	101.3	-61.5	169.1	562.7	277.1	67.2	1.000037
54000.0	98.8	-65.0	165.5	562.1	277.0	66.1	1.000036
54500.0	98.4	-62.3	161.5	561.9	278.9	65.0	1.000035
55000.0	94.9	-65.7	157.8	561.1	276.9	63.2	1.000034
55500.0	91.7	-62.1	154.2	560.9	275.9	61.3	1.000034
56000.0	89.4	-60.4	150.5	560.2	276.9	59.3	1.000034
56500.0	87.2	-65.7	146.5	561.1	277.2	53.9	1.000033
57000.0	85.1	-65.1	142.4	562.0	277.3	48.6	1.000032
57500.0	77.1	-62.3	127.6	562.4	279.1	27.4	1.000031
58000.0	75.2	-63.1	124.7	564.6	279.0	26.0	1.000030
58500.0	73.4	-63.4	121.5	564.2	274.5	24.6	1.000027
59000.0	81.0	-63.7	134.7	563.9	277.7	37.5	1.000026
59500.0	79.0	-63.1	131.0	564.7	277.0	31.8	1.000025
60000.0	68.1	-63.5	127.6	563.9	278.4	20.5	1.000025
60500.0	68.1	-63.5	119.3	565.2	277.1	16.2	1.000025
61000.0	66.5	-63.3	116.4	564.4	292.7	15.9	1.000024
61500.0	64.9	-63.0	107.5	564.6	290.4	13.5	1.000024
62000.0	62.5	-62.5	104.7	565.2	247.6	11.3	1.000023
62500.0	61.8	-62.3	102.0	565.7	244.9	11.3	1.000023
63000.0	60.3	-62.0	95.4	566.1	240.0	12.3	1.000022

STATION ALTITUDE 4760.6 FEET ASL  
 2 59.79 0930 hrs MSI  
 15 JULY 1961 NO. 140

UPPER AIR DATA  
 3050170240  
 AFSC

TABLE 5 (CONT)

EODETIC COORDINATES  
 33.04086 LAT DEG  
 106.36511 LONG DEG

GEOPHYSICAL ALTITUDE METERS	PRESSURE MILLIBARS	TEMPERATURE DEGREES CENTIGRADE	AIR DENSITY PERCENT	REL. HUM. PERCENT	REFRACTIVE INDEX METER	DIRECTION DEGREES (TN)	WIND DATA KNOTS	INDEX OF REFRACTION
04500.0	98.8	-61.6			90.8	247.9	13.3	1.000022
04500.0	57.4	-61.1			94.3	254.4	14.9	1.000021
04500.0	30.0	-60.1			95.0	260.4	16.7	1.000020
04500.0	54.7	-59.6			96.0	265.1	18.7	1.000020
04500.0	53.4	-58.0			86.4	267.4	18.9	1.000019
04500.0	52.1	-57.2			89.0	269.7	19.1	1.000019
04500.0	50.9	-55.9			81.0	271.9	19.4	1.000018
04500.0	49.7	-55.2			77.4	269.4	17.1	1.000018
04500.0	48.5	-55.4			77.0	265.3	14.6	1.000017
04500.0	47.4	-55.5			75.8	274.7	259.0	12.3
04500.0	46.2	-55.7			74.1	274.5	246.9	9.3
04500.0	45.2	-55.9			72.4	274.3	218.7	6.9
04500.0	44.1	-55.9			70.7	274.1	139.0	7.1
04500.0	43.1	-55.1			69.1	273.9	168.0	8.7
04500.0	42.0	-55.3			67.5	273.7	199.2	9.3
04500.0	41.1	-55.4			56.0	273.5	221.1	12.0
04500.0	40.1	-55.6			64.5	273.3	255.9	15.8
04500.0	39.2	-56.7			62.0	273.1	239.9	16.7
04500.0	38.2	-56.7			51.5	273.1	244.1	21.5
04500.0	37.3	-56.6			50.1	273.3	247.3	24.4
04500.0	36.5	-56.5			56.0	273.5	249.4	1.000013
04500.0	35.6	-56.3			57.2	273.3	227.0	19.5
04500.0	34.8	-56.2			55.8	273.0	221.0	15.2
04500.0	33.9	-56.1			54.5	274.0	196.4	12.9
04500.0	33.1	-55.9			53.2	274.2		1.000012
04500.0	32.4	-55.8			51.9	274.3		1.000012
04500.0	31.5	-55.7			50.0	274.5		1.000011
04500.0	30.9	-55.6			49.4	274.7		1.000011
04500.0	30.1	-55.4			49.2	274.6		1.000011

STATION NUMBER 4700-63 FEET MSL  
2 NOV. 1950 HRS MST  
ASSEMBLY NO. 140

ANEROSTAT LEVELS  
3051170140  
AFSC  
TABLE 6

PRESSURE	GEOPOTENTIAL	TEMPERATURE	REL. HUM.	WIND DATA
MILLIBARS	FUET	AIR DEPOLL DEGREES CENIGRAD	PERCENT	DIRECTION DEGREES (IN) KNOTS
850.0	5079.	7.8	-4.0	9999.0XX
800.0	6704.	3.0	-7.3	9999.0XX
750.0	8497.	-3	-10.7	359.0 19.6
700.0	10214.	-1.2	-15.4	334.0 12.6
650.0	12160.	-1.1	-15.6	2.0 0.9
600.0	14249.	-1.2	-17.5	314.7 14.9
550.0	16430.	-7.8	-21.5	298.5 22.7
500.0	18567.	-13.2	-26.0	293.0 29.7
450.0	21474.	-23.2	-32.0	236.0 34.3
400.0	24222.	-76.1	-79.5	274.0 36.2
350.0	27115.	-30.3	-34.2	275.1 51.2
300.0	30319.	-40.2	-44.2	271.3 56.4
250.0	34635.	-49.9	-55.0	271.6 60.1
200.0	39350.	-55.9	-55.9	273.9 80.5
175.0	42129.	-54.7	-54.7	279.0 90.4
150.0	45347.	-57.9	-57.9	279.3 87.9
125.0	49627.	-61.8	-61.8	274.3 63.6
100.0	55520.	-64.0	-64.0	277.0 60.7
80.0	58655.	-63.4	-63.4	277.7 35.0
75.0	69748.	-64.0	-64.0	270.9 20.8
70.0	75661.	-61.9	-61.9	246.7 14.4
50.0	97614.	-55.2	-55.2	270.0 16.0
40.0	12272.	-55.6	-55.6	234.3 16.0
30.0	13271.	-55.4	-55.4	

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

XX WIND DATA INVALID DUE TO MISSING RAY AZIMUTH AND ELEVATION ANGLES.